(d) contacting the probe assay article with the target biopolymer, or contacting the target assay article with the probe biopolymer under a condition that allows the formation of a complex comprising the probe and the target biopolymers; and

(e) detecting and determining the presence of the complex as a measurement for the presence or the amount of the target biopolymer contained in the sample.

Please add new claims 55-70.

55. (New) The method of claim 29, wherein the probe biopolymer or the target biopolymer of step (c) is unmodified.

56. (New) The method of claim 29, wherein the probe biopolymer or the target biopolymer of step (c) is modified.

57. (New) The method of claim 29, wherein the amount of the probe biopolymer or the target biopolymer contacted with the substrate in step (c) ranges from about 10^{-20} to about 10^{-14} moles.

58. (New) The method of claim 57, wherein the probe biopolymer or the target biopolymer is a polynucleotide, and the amount of the polynucleotide is about 10^{-18} moles.

59. (New) The method of claim 57, wherein the contacting step (c) comprises placing an aliquot of the probe biopolymer or the target biopolymer solution on the modified substrate, wherein the aliquot is from about 0.1 nL to about 500 nL.

60. (New) The method of claim 59, wherein the probe biopolymer or the target biopolymer is a polynucleotide, and the aliquot is about 10 nl.

61. (New) The method of claim 29, wherein the drying is air-drying conducted for a period ranging from about 5 minutes to about 60 minutes.

62. (New) The method of claim 61, wherein the air-drying is conducted for a period of about 15 min.

63. (New) The method of claim 29, wherein the modified substrate is polypropylene or polystyrene modified by introduction of a functionality selected from a group consisting of amino, carboxyl, hydroxyl, thiol, and their derivatives.

64. (New) A method of detecting a polypeptide contained in a sample, comprising the steps of:

(a) providing a modified substrate;

(b) providing a probe polypeptide that can form a complex with the target polypeptide;

(c) contacting either the probe or target polypeptide with a surface of the substrate under a condition sufficient for a direct adsorption of either the probe or target polypeptide on the substrate surface to form a probe assay article or a target assay article, respectively;

(d) contacting the probe assay article with the target polypeptide, or contacting the target assay article with the probe polypeptide under a condition that allows the formation of a complex comprising the probe and the target polypeptides; and

(e) detecting and determining the presence of the complex as a measurement for the presence or the amount of the target polypeptide contained in the sample.

65. (New) The method of claim 64, wherein the probe polypeptide is a protein.

66. (New) The method of claim 64, wherein the target polypeptide is a protein.

67. (New) The method of claim 64, wherein the step of providing the target polypeptide or the probe polypeptide comprises providing a solution of the target polypeptide or the probe polypeptide; and the step of contacting comprises:

(a) placing an aliquot of the target polypeptide or the probe polypeptide solution on the substrate; and